This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-13 (canceled)

Claim 14 (currently amended). A method of manufacturing an endoluminal stent capable of radially expanding from a first diameter to a second diameter and having a plurality of first structural elements defining a longitudinal axis of the stent and a plurality of second structural elements interconnecting adjacent pairs of first structural elements and defining a circumferential axis of the stent, comprising the steps of:

a. providing a generally cylindrical metal substrate having a continuously curved, unpatterned exterior metal surface capable of accommodating metal deposition thereupon;

b. depositing a stent-forming metal onto the exterior surface of the substrate by a vacuum deposition method;

c. defining the plurality of first structural elements and the plurality of second structural elements of the endoluminal stent in the deposited stent-forming metal; and

d. removing the generally cylindrical metal substrate from the endoluminal stent formed thereupon.

Claims 15-17 (canceled).

Claim 18 (previously amended) The method according to Claim 14, wherein step (b) is conducted by ion beam-assisted evaporative deposition.

Claim 19 (previously amended) The method according to Claim 14, wherein step (b) is conducted by sputtering.

Claim 20 (previously amended) The method according to Claim 18, wherein the ion beam-assisted evaporative deposition is conducted in the presence of an inert gas.

Claims 21-22 (canceled)

Claim 23 (original) The method according to Claim 20, wherein the inert gas is selected from the group consisting of argon, xenon, nitrogen and neon.

Claims 24-28 (canceled).

Claim 29 (currently amended) A method of manufacturing an endoluminal stent capable of radially expanding from a first diameter to a second diameter and having a plurality of first structural elements defining a longitudinal axis of the stent and a plurality of second structural elements interconnecting adjacent pairs of first structural elements and defining a circumferential axis of the stent, comprising the steps of:

a. providing a generally cylindrical metal substrate having an unpatterned, generally continuously curved exterior metal surface capable of accommodating metal deposition thereupon;
b. depositing a stent-forming metal onto the exterior metal surface of the substrate by vacuum deposition;
c. forming in the stent-forming metal the plurality of first structural elements and the plurality of second structural elements interconnecting adjacent pairs of first structural elements; and
d. removing the substrate from the endoluminal stent formed thereupon, thereby obtaining an endoluminal stent capable of radially expanding from a first diameter to a second diameter by geometric deformation of at least some of the plurality second structural elements.

Claim 30 (Previously added) The method of Claim 29, wherein the vacuum deposition of step (b) further comprises sputter deposition.

Claim 31 (Previously added) The method of Claim 29, wherein the stent-forming metal of step (b) further comprises a shape memory alloy.

Claim 32 (Previously added) The method of Claim 31, wherein the shape memory alloy further comprises a binary nickel-titanium alloy.

Claim 33 (Previously added) The method of Claim 29, wherein the stent-forming metal of step (b) is selected from the group consisting of elemental titanium, vanadium, aluminum, nickel, tantalum, zirconium, chromium, silver, gold, silicon, magnesium, niobium, scandium, platinum, cobalt, palladium, manganese, molybdenum and alloys thereof, and nitinol and stainless steel.

Claim 34 (canceled)

Claim 35 (Previously added) The method of Claim 29, wherein step (b) further comprises the step of controlling heterogeneities in the stent-forming metal during vacuum deposition.

Claim 36 (Previously added) The method of Claim 35, wherein the step of controlling heterogeneities further comprises the step of controlling at least one of grain size, grain phase, grain material composition, stent material composition and surface topography during vacuum deposition.

Claim 37 (Previously added) The method of Claim 35, wherein the step of controlling heterogeneities further comprises the step of defining polar and non-polar binding sites for binding blood plasma proteins.

Claim 38 (Previously added) The method of Claim 29 wherein step (b) further comprises the step of controlling at least one of fatigue life, corrosion resistance, corrosion fatigue, inter- and intra-granular precipitates, bulk material composition, bulk and surface material properties, radioopacity, transverse geometric profile of the endoluminal stent, Z-axis thickness, X-Y-axis surface area of the first and second structural elements, thereby affecting at least one of longitudinal flexibility, hoop strength, radial expansion behavior and profile of the endoluminal stent.